A decade of national climate action: Stocktake and the Road Ahead



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Argentina is a country with a population of around 46 million people, according to the 2022 Census. According to the World Bank, Argentina is classified as an upper middle-income country, whose GDP per capita (in current values) in 2023 was US\$14,187, placing it around the 60th position worldwide. Argentina has also been a member of G20 since 1999. The country has a total area of 3.7 MM km², of which 2.78 MM km² is continental. Of the continental territory, 47 MM hectares are covered by native forest, 1.3 MM hectares by cultivated forest, and 42.5 MM hectares by cropland.

In 2022, the country's global emissions were 401 MtCO₂e, with Energy representing 50% of total emissions and the Agriculture, Forestry, and Other Land Use (AFOLU) sector comprising 38%. Per capita emissions have remained close to 8 tCO₂ since 2015, significantly below the 12 tCO₂e/ capita in 2007 (mainly due to a reduction in deforestation). This is above the Latin Americas average of about 5 tCO₂e/capita (CEPALSTAT, 2024). In 2023 Argentina's final energy consumption per capita was 50 GJ, while per capita electricity consumption has reached approximately 2,700 kWh, growing at an annual rate of 3.5%.



ROLE OF LONG-TERM

Argentina ratified the United Nations Framework Convention on Climate Change (UNFCCC) (December 7, 1993), and the Kyoto Protocol (June 20, 2001). In line with the ratification of these international agreements, it has developed many regulations and policy documents. The country submitted three national communications (1997, 2008, and 2015). The First Biennial Update Report was presented in 2017, the second in 2019, the third in 2021, and the fourth in 2023. Argentina presented its first Biennial Transparency Report (BTR)¹ in accordance with the PA's Enhanced Transparency Framework in 2024. The first NDC was submitted in 2016, the second in 2020, and in 2021 a revision of the target was submitted, establishing that «Argentina's GHG emissions will not exceed, in 2030, 349 MM tons of CO_2e^2 ». In 2022, the country presented its LTS for 2050, approved by Resolution No. 218 of 2023. The NIR corresponding to 2022 (included in BTR1) shows net GHG emissions of 401 MM tons of CO₂e (using AR5 GWPs). Meanwhile, the

NDC implementation⁴. At the sectoral level, there are various long-term studies & plans developed within government agencies or with the support of academic institutions and diverse think tanks, which demonstrate the existence of national capacity in the application of long-term planning methodologies. Indeed, Argentina is characterized by the existence of an interesting capacity in science

target-compatible indicator³ is 378 MM tons of CO₂e. For comparative purposes, the revised

NDC2 includes an indicative GHG emissions

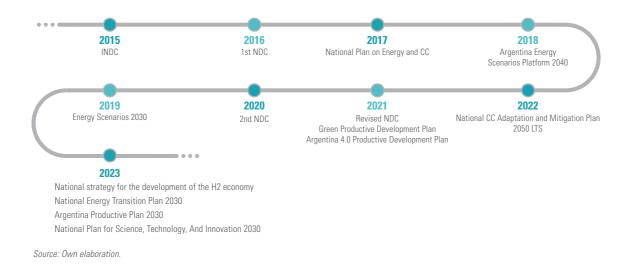
value of 372 MM tons of CO₂e for the year 2025,

which provides a reference for the progress of

existence of an interesting capacity in science and technology that supports the climate debate, as well as different think tanks that reflect the country's capacity. Nevertheless, many of these documents/strategies are modified when governments change. As a result, some strategies are not implemented as they were originally intended to

- 3 This indicator includes: (a) changes in common metrics (recalculating NIR 2022 with AR2 GWPs, which reduces total net emissions by 7.11%); (b) elimination of categories (26 estimates associated with 16 categories not considered in BUR3 were excluded from the previous value, leading to an additional reduction of 3. 59%); and (c) methodological changes (by applying an adjustment factor based on a comparison of the implicit emission factor between BTR1 and BUR3, which results in a 5.2% increase in emissions adjusted using the two previous criteria).
- 4 These values correspond to the NIR 2022, prior to the change in government administration and the change in climate policy regarding Argentina's participation in international negotiations.
- 1 The BTR1 reports mitigation measures in Energy, Agriculture, and Native Forests.
- 2 Implementation period between January 1, 2021, and December 31, 2030

Figure 1. Some recent adaptation, mitigation and transition Strategies and Plans (2015-2023)



In other words, there are several studies that incorporate a long-term perspective, but there certainly does not exist a consensus on long-term policy to take these long-term studies seriously as a basis. Instead, there are changes depending on the political cycle. Figure 1 shows a summary of the main documents concerning plans, strategies, and reporting since the signing of the Paris Agreement.

Figure 2 shows the evolution of GHG emissions and GDP. It is important to highlight the "mitigation effect" of the economic stagnation since 2011, driven by the political and economic instability that characterized the last 15 years, compounded by the impact of the external crisis. The slowdown in emissions responds more to the stagnation in the level of activity rather than to the success of climate policies. GDP in 2023 (and estimates for 2024) are still below 2015 and 2017, with industrial GDP 8% lower than in 2015. It is straightforward that in the context of eventual growth in economic activity in the future, the current trend may not be sufficient to fulfill the commitment made for 2030.

SOME SLIGHT PROGRESS IN ENERGY AND LULUCF SECTORS

From the 1990s onwards and following ratification of the UNFCCC, environmental laws contributed to the institutionalization of the environmental

agenda with some progress: increase in public knowledge and professional training, capacity building at different governmental levels, reduction of deforestation, increased clean electricity generation, re-evaluation of hydropower potential, and increased involvement of stakeholders (civil society and industrial sector).

One of the most relevant milestones in the energy sector was setting a target for non-conventional renewable generation, consolidated with the Law 27,191 of 2015 and subsequent renewable energy biddings and plans with specific policy instruments (mainly economic). These instruments managed to increase the share of solar and wind generation (although with FITs set at values higher than the average economic cost of the national electricity system). Attempts were also made to increase distributed generation through regulatory actions, whose share is now increasing due to the recent decrease in PV costs and the progressive increase in electricity tariffs.

In 2023, the Secretary for Energy published the National Energy Transition Plan 2030, which establishes aspirational objectives and targets to 2030: 50% renewable generation; 1 GW of distributed generation capacity (3% of electricity demand for 2030); increase the high-voltage transmission system (additional capacity representing 35% of current one); promote energy efficiency measures to reduce consumption by 8%; nuclear development, with the completion

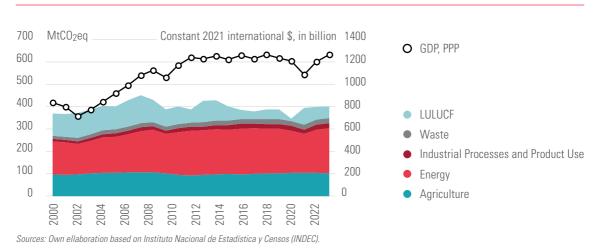


Figure 2. GHG emissions 2000-2022

of the Argentine-designed SMR as an intermediate step towards increasing the nuclear share of electricity generation; increase hydroelectric development (less than 50% of it has been developed); explore different strategies for green H₂ (blend with natural gas, and green ammonia to be used in electricity generation and exports); among others. In 2024, the National Strategy for the Development of the Hydrogen Economy was published, which proposes the production, use, and export of green, blue, and pink hydrogen. In the case of the land use, land-use change, and forestry sector (LULUCF), the Law on Minimum Standards for the Environmental Protection of Native Forests (2007), modified the national scenario for the protection of native forests and highlights problems and importance of the conservation of these ecosystems. In addition, it promoted a progressive decrease in the annual rate of deforestation in Argentina, between 2007 and 2015, stabilizing in the period 2016 to 2019, at which time the rate of deforestation increased again. In this sense, a report from the former Ministry of Environment of the Nation indicated that instruments implemented between 2007-2015 had a positive impact on the reduction of deforestation. The annual percentage of loss with respect to the total remaining (rate) in the country decreased from 0.94 % in 2007 to 0.34 % in 2015. However, since 2016 it increased to 0.42 in 2018 (about 180 thousand hectares).

BLOCKAGES FOR DECARBONIZATION & DEVELOPMENT PROCESS

However, while some policy progress was occurring and increasingly ambitious commitments were being announced, emissions did not decrease (as shown in Figure 2) but instead they increased between 1990-2007, before falling slightly by 2022. According to data from the latest BTR (2024), the change in the trend is explained by LULUCF, whose emissions decreased between 2012 and 2020 and then increased slightly. Meanwhile, emissions from industry and waste increased, while those from agriculture and

energy have remained roughly stable since 2010. This situation has been caused by several factors. Some authors identify as a key issue the disconnection between the agendas of different areas of government and the climate agenda, coupled with resistance from certain key stakeholders, which may have led to a lack of consistency between the commitments and the implemented policy guidelines (Aneise and Möhle, 2024). In this regard, while some progress can be highlighted in each of the key emitting sectors, energy, transport (within energy), LULUCF, and agriculture, there have been many blockages that have impacted negatively in the performance of the policies.

Many of these initiatives face effective resource constraints, mainly those that are difficult to partition and require high access costs. A concrete example is hydroelectric projects that have detailed feasibility studies with extensive information but have not obtained local or international financing for their deployment. The hydrogen strategy will very likely suffer the same fate, as it was directly designed to be driven by foreign direct investment. This confronts Argentina with the old dilemma of development versus enclave, as historically the conditions that must be set to attract foreign investment have always been very unfavorable for local development. Other barriers to further progress in the transition to a more decarbonized power sector have been the existence of badly designed and oriented energy subsidies (particularly in electricity) leading to inefficiencies and increased energy consumption while failing to reduce energy poverty, a policy that has been sustained with fewer differences over the last 3-4 administrations.

The **transport sector**, which accounts for 28% of emissions from the energy sector and 14% of global emissions, and whose emissions have increased significantly since 2010, is a very complex sector. For urban passenger transport, by 2021, public transport was only present in big / medium metropolitan areas, and its importance is declining rapidly in other urban centres. Most of the transport is motorized, with only Buenos Aires offering rail transport. In intercity passenger

transport, individual transport is also more relevant than public transport, with very low participation of rail transport. In the case of freight transport complexity increases due to Argentina's dependence on agricultural exports, which are transported 90% by trucks⁵, with rail accounting for less than 3% (Müller & Di Sbroiavacca, 2019). In LULUCF, despite the existence of the above-mentioned law, Argentina's native forests have been undergoing major changes because of land use changes for agricultural, forestry, urban and road activities. The advance of deforestation and conversion of these natural environments for such activities causes serious social, environmental and economic consequences, often irreversible (FARN, FVSA, 2024). The main problems were related to a decrease in the political relevance of the sector, reflected in a reduction in financial support and especially to economic interests. All these aspects resulted in increased deforestation. Vida Silvestre and FARN (2024) indicate that since 2014, the law has received less than 10% of its budget. They also point to a lack of defined goals and deficiencies in impact assessment. According to inventory information, the largest number of emissions corresponds to forest land converted to pasture and forest land converted to cropland. These aspects highlight recent weaknesses in regulatory enforcement, associated with the lack of control over illegal deforestation. The close link between the economic interests of the agricultural sector and its impact on deforestation for land conversion to cropland is also evident. Meanwhile, **live-stock-related emissions** have shown greater stability. This behaviour is explained by the fact that the main driver for these emissions is the cattle population, which in Argentina has stabilized for many years at around 50 MM (SSAmb, 2024). Jointly, these two sources account for more than 90% of Argentina's AFOLU emissions since 1990.

LINK WITH NON-CLIMATE QUESTIONS

Directly related to the aspects mentioned below, there are some aspects of the Argentinean economy over the last decades closely related to, or having an impact on climate change aspects that need to be evaluated in the framework of climate commitments.

First, in the last decade (2015 to the present), Argentina has experienced a noticeable deterioration in income distribution, reflected in a significant drop in the share of national income received by workers and other lower-income sectors, in favour of the higher-income and more concentrated sectors of the economy. This behaviour results from the economic and social local policies applied in the last decade,



Figure 3. GINI coefficient for per capita household income in Argentina

⁵ Less than 10% of transported products consists of industrial products; almost 70% is made up of primary goods.

together with exogenous factors, such as the impacts of the COVID-19 pandemic and the local consequences of the repercussions on international markets of the war in Europe. This can be observed in Figure 3 that shows an increase in the Gini coefficient from 2015 to the present The previously discussed trajectory of emissions in the last decade has been coupled neither to an improvement in the quality of life of the population, nor to greater equity in the distribution of the benefits of economic activity. For instance, emissions grew steadily between 1990 and 2002, despite stagnation, and subsequent sharp drop-in economic activity and population income between 1997 and 2002. Inequality in income distribution could exacerbate the challenges of the energy transition, affecting the most vulnerable low-income households, mainly indigenous communities and rural areas, who face energy poverty and greater difficulties in accessing basic services and sustainable energy sources and technologies.

Also, being Argentina a country heavily indebted in foreign currency, it is a significant challenge to meet external debt service obligations without compromising the availability of resources needed to address urgent adaptation needs and respond to potential damages caused by extreme weather events, climate variability, and climate change. Added to this is the obligation to fulfil the mitigation commitments established in its NDC, all within a context of shrinking domestic economic activity, structural adjustment measures, declining incomes, deteriorating living standards for middle and working classes, and an increasing shortage of foreign currency. These conditions can lead to a scenario in which, to meet climate objectives, other environmental aspects may be jeopardized due to intensified exploitation, private appropriation, and export of natural resources and common goods. In such a scenario, Argentina may face severe financing constraints that hinder investment in recovery and resilience.

Furthermore, public policies are crucial to face the challenges of climate change, and, in Argentina, there is a significant withdrawal of public funding for policies related to the most vulnerable sectors of the population, a reduction (interruption) of public investment in infrastructure (both expansion and maintenance), a drop in funds allocated to public health and education, and a strong deterioration of policies under Federal Government. This reduction in public investment and spending has the objective of reducing inflation, stabilizing the exchange rate and complying with the objectives committed with international financial organizations. It generates, amongst other effects, an increase in vulnerability to the consequences of extreme weather events and climate variability and change, as shown by the recent episodes of torrential rains and floods in various localities of the country, with the consequent material damage and human losses⁶. These episodes have happened in the context of deterioration of the population's real income and a general fall in consumption and quality of life of the popular classes. These macroeconomic policies that result in increasing inequality in income distribution can be considered as an example of «maladaptation» for facing climate change challenges. The IPCC defines "maladaptation" as those actions that may lead to increased risk of adverse climate-related outcomes, increased GHG emissions, increased or shifted vulnerability to climate change, more inequitable outcomes, or diminished welfare, now or in the future. "Maladaptation" is a process that results in increased vulnerability to climate variability and change, directly or indirectly, and/or significantly undermines current and future adaptive capacities or opportunities (Magnan, 2014).

In the case of Argentina, energy transition could lead to a significant increase in socio-environmental conflicts due to the intensification of exploitation of critical resources and inputs for

⁶ In March 2025, unusual torrential rains in a few hours affected the city of Bahía Blanca (500 km from the country's capital), resulting in 16 deaths and damage to local infrastructure, public services, and total losses in various sectors of the local economy. Monetary losses reached 500 billion pesos. This event was considered one of the worst storms in the city's history, quickly exceeding the amount of rain that normally falls throughout the entire year. A couple of months later, in May 2025, another storm caused flooding in Zárate and Campana, cities closer to the country's capital. In both cases, the cities were unprepared for the situation and did not receive sufficient funding for relief efforts afterward.

the development of low-carbon technologies (lithium, copper, silver, lanthanides, etc.) which are located in territories far from the main urban centres, ancestrally occupied by indigenous, extremely poor and vulnerable populations. The deepening of «extractivist» policies, which involve maximising the exploitation of these resources without paying attention to their impacts on those vulnerable populations, may affect their forms of subsistence and cultural practices and increase disparities in income and quality of life and generate more unfavourable conditions for adaptation.

Moreover, another important factor hindering the progress and effective implementation of mitigation measures within the country is the absence of a clear domestic policy that incorporates the principle of common but differentiated responsibilities (CBDR). This shortcoming is evident in the stark disparities in consumption and emission patterns between different segments of the population. In particular, the upper middle income class segment displays consumption habits comparable to, and in some cases even exceeding, developed countries, while the most vulnerable groups still face unmet basic material needs. Public policy has so far inadequately addressed the implementation of mechanisms that allocate climate responsibilities in line with each social group's economic capacity and consumption level. A clear example of this is the long-standing practice of generalized and bad oriented energy subsidies, promoting non-efficient and inequitable consumption patterns. In this sense, moving towards a more progressive energy tariff structure, consistent with the principle of CBDR, could make a significant contribution to aligning domestic policy with both mitigation goals and social equity objectives in the energy sector.

Finally, it is important to highlight a close relation between the energy sector and the Argentinean macroeconomy, with clear climate implications. The energy sector's structural problems have constituted a substantive barrier for the country's economic development, impacting the growth of GDP and, due to the high dependence of the

Argentinean economy on currency (especially US dollars), strengthening the external restriction (Basualdo, 2006; Barrera, 2021; Barrera et al., 2022). Indeed, the energy sector currently accounts for 5.6% of GDP and representing 9.4% of total exports in 2023 and it is expected to gain relevance in the coming years due to the exploitation of the Vaca Muerta formation, which may lead Argentina to a low-cost long-term reserves' horizon economy⁷. Developing just 50% of its potential could generate annual oil and gas exports valued at an estimated USD 34 billion (Arceo et al., 2022), representing approximately 41% of Argentina's total goods and services exports in 2023. There is a clear official consensus on the recognition of the economic relevance of the exploitation of fossil fuels. It is expected that the development of the natural gas complex may contribute not only to the global energy transition but also to increase exports, improving the performance of the Argentine economy in the generation of foreign currency and reducing external vulnerability. However, given that the global decarbonization process is underway and natural gas is clearly a contested market, the proper timing of export infrastructure investments face the risk of an international market with little room for export potential (Aneise and Möhle, 2024).

GOVERNANCE

According to Argentina's federal organization, environmental governance is distributed between the national government and the provinces. This distribution is determined by the National Constitution (amended in 1994) and the General Environmental Law (2002). This demands institutional and organizational structures at different levels and imposes challenges to the federal government to implement national policies, which must be approved by provinces, with "original ownership" of the natural resources in their territory and the right to exploit, distribute, and commercialize them.

7 Lifting costs in Vaca Muerta approached 1 USD per MMBtu in 2023

The two most relevant environmental laws are the General Environment Law, and Law on Minimum Requirements for Adaptation and Mitigation of Global Climate Change (the Climate Change Law of 2019). The former lists environmental policy and management instruments, including the institutionalization of the Federal Environment Council (COFEMA), responsible for coordination between the provinces and the federal government. The latter ratifies the international commitments and strengthens climate policy and planning, establishes minimum environmental protection budgets to guarantee policy instruments, stimulates the development of the National Climate Change Adaptation and Mitigation Plan, the Jurisdictional Climate Change Response Plans⁸, and institutionalizes the National Climate Change Cabinet (created in 2016) (NCCC).

In Argentina environmental and climate change policy is under the responsibility of the Secretariat of Environment and Sustainable Development, with many institutional changes in recent decades. It was a secretariat between 1990 and 2015. In 2015, it was granted the status of Ministry, in 2018 it became a secretariat again (under the General Secretariat of the Presidency). In 2019, it was once again classified as a Ministry. Finally, in 2024 it was turned into an Undersecretariat under the Secretariat of Tourism, Environment, and Sports. This clearly indicates that the Climate Governance hierarchy has been highly dependent on the incumbent national government.

Indeed, Argentinean environmental governance has been characterized in recent decades by significant changes, and climate policies have been subject to various fluctuations, some related by changes in foreign policy, which resulted in changes in negotiations. Nevertheless, since the ratification of the UNFCCC agreement, regardless of the political governing party, Argentina has always had a positive attitude and has shown an environmental international commitment. However, the recent arrival of President Milei is

very challenging for Argentine climate diplomacy. The environmental authority was highly downgraded, in line with the government's anti-globalist rhetoric, its denial of climate change, and its opposition to the 2030 Agenda (Aneise and Möhle, 2024). This was clear in 2024 when the Argentinean delegates at COP29 (Baku) were ordered to withdraw from negotiations and return home. This, nevertheless, is contradictory to the President's willing to include Argentina in OECD and other organizations of developed nations, which may claim for the inclusion of the climate agenda within national priorities.

It seems important to return to the previous climate position as a necessary condition to enable private and multilateral financing opportunities, which is a necessary (although not sufficient) condition to undergo a decarbonized path compatible with socioeconomic development.

INTERNATIONAL COOPERATION

In the past decade, Argentina has received substantial international funding (from multilateral organizations such as the IMF, the World Bank, and the IDB), to address critical short and medium-term macroeconomic crises, while financing allocated to projects with positive impact on climate action or sustainable development has been comparatively limited. The most notable case was the 2018 Stand-By Agreement with the IMF, amounting to USD 44.5 billion (the largest loan in the Fund's history, exceedingly even the statutory limits and conditions, and making Argentina responsible for 29% of the IMF's total outstanding credit). However, most of these funds did not aim to support sustainable economic development but primarily used to cover the sharp depletion of the Central Bank's reserves and to attempt to stabilize the financial system amid a severe financial and currency crisis triggered by the sudden outflow of short-term speculative capital following a period of carrytrade inflows. Despite this, the strategy notably failed to prevent a sharp devaluation and a significant increase in public debt, further undermin-

⁸ According to the federal organization, these plans must be developed by the provinces and the Autonomous City of Buenos Aires

ing the sustainability of the country's economic growth. In 2022, under a new government, Argentina renegotiated with the IMF through an Extended Fund Facility Agreement, to refinance the repayments of this previous loan. In contrast, resources allocated to climate change mitigation and adaptation, such as renewable energy, resilient infrastructure, or environmental protection, have been significantly more limited (BTR, 2024). There are many examples of situations where these mitigation and adaptation infrastructure investments have been neglected. Such is the case of multipurpose hydroelectric power plants or renewable energy parks, intended to promote local integration and development and strengthen disadvantaged areas. For instance, Chihuido I and II hydroelectric dam projects, which have remained on the public agenda for several decades and failed to get accessible international financing to make them viable. Another emblematic case has been the expansion of nuclear generation capacity, both aiming to increase its share in electricity power and to develop local capacities, including venturing into light water PWR reactors and further developing SMRs. A financial and construction agreement was about to be finalized with the Chinese government, but pressure from the US during the agreement with the IMF contributed to its paralysis. The hydroelectric plants under construction in the south of the country (on the Santa Cruz River in the heart of a sparsely populated area with great difficulties in promoting regional development), built with Chinese support and financing, also suffered multiple paralysis and redesigning processes aimed in budget cuts without solid technical arguments. These cases reveal a marked imbalance in the priorities of international cooperation with Argentina.

The critical link between external debt and low-carbon environmentally compatible development processes has been discussed throughout recent decades. Some authors stress the need for a redefinition of financial markets to support energy changes in the low- and medium-income countries, derisking investments in emerging countries, which usually receive low

credit ratings that generate high interest rates on loans (Dixson-Declève et al., 2022). Similarly, the recently published Jubilee Report argues that the debt crisis plaguing global financial system is also fueling a development crisis, as many developing countries now spend 10% or more of their tax revenues just on interest burdens, and they have nearly doubled in the past decade (Pontifical Academy of Social Sciences, 2025). To meet obligations to their external creditors, debt-distressed countries are sacrificing investments in education, healthcare, infrastructure, and climate resilience; therefore, unresolved debt crises have both short- and long-term adverse effects on development. There are local reasons for these debt crises: Governments borrowing too much at too high rates and failing to adopt capital accounting regulations to deter destabilizing speculative flows and prioritizing short term; and external reasons: creditors providing excessive financing, international financial institutions with lending policies enabling speculative behavior. As stressed by the literature it may be important that the international community can address the problems of the global financial architecture, and IFIs need to take stronger measures to prevent and resolve recurrent debt and development crises. This approach, accompanied by a local strategy that removes many of the barriers mentioned above and creates the necessary conditions, would be particularly important for Argentina to move forward on the path to fulfilling its climate commitments. It may probably require different alternatives of Blended Finance specially directed to energy industries, which may include soft loans (convenient rates & timeframes) and guaranteed funds (help overcome reluctance amongst private sector lenders or equity investors). All of this should be accompanied by domestic policies incorporating the concept of CBDR, reducing the inequalities and distortions in income, prices, and tariffs.

It is also worth critically questioning whether the very design of the PA contains a structural contradiction between the stated principle of CBDR and the way in which the NDCs effectively distribute the burden of climate action. The flexibility in

setting targets, combined with repeated deadline extensions and the lack of robust binding mechanisms, ultimately dilutes the responsibility of historically high-emitting countries, increasingly shifting the mitigation pressure onto emerging economies with later or more recent industrialization. As a result, the current framework risks reproducing structural asymmetries and perpetuating inequality throughout the climate transition, raising questions about the fairness and effectiveness of the international climate regime. Although the PA formally maintains the principle of CBDR, the way in which it is applied and discussed raises doubts about the real recognition of the historical responsibility of industrialized countries, mainly about the ambition of their NDCs and the fulfillment of their commitments on financing and technology transfer. Some of these industrialized countries, which, in accordance with their historical responsibility, should have taken the lead in implementing measures, signed the Kyoto Protocol but never ratified it or participated as Parties to it.

The Paris Agreement recognizes that all countries must take climate action, and in fact, all countries ultimately make some kind of commitment. However, the measures are limited by their national circumstances and their capacity for intervention.

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